EXECUTIVE SUMMARY

The National Nuclear Security Administration[1] (NNSA) has assigned a continuing role to Los Alamos National Laboratory (LANL) in carrying out NNSA's national security mission. To enable LANL to continue this enduring responsibility requires that NNSA maintain the capabilities and capacities required in support of its national mission assignments at LANL. To carry out its Congressionally assigned mission requirements, NNSA must maintain a safe and reliable infrastructure at LANL. In order to accomplish its mission support activities, a reliable, increased electric service supply system is necessary. NNSA needs to provide the capability to meet enhanced electric power requirements of LANL facilities in a timely, fiscally prudent manner. Upgrades to the various utility services at LANL have been ongoing over the years together with routine maintenance activities. However, the replacement of site utilities is now necessary as these elements have been operating well beyond their original design estimates for the past 20 to 30 years and their components are suffering from normal stresses, strains, and general failures. NNSA has been contemplating upgrading or replacing the aging electric power generators within Technical Area (TA)-3 at LANL for the past 10 to 20 years or more as the generators have aged and the repair rate and associated expenses have increased.

The Proposed Action is to install and operate two new simple-cycle gas-fired combustion turbine generators (CTGs), each with an approximate output of 20 megawatts of electricity (rated at 7,400 feet [ft] or 2,220 meters [m] elevation) as stand-alone structures within the Building-22 Co-generation Complex at TA-3. Installation of the CTGs would occur consecutively over a period of years and would also include installation of two new compressors to provide the gas pressure required for operation of the CTGs. The Proposed Action has two options: (Option A) installation of two CTGs (CTG 1 and CTG 2) that would be used long-term as simple-cycle gas-fired turbine generators without co-generation capabilities or (Option B) installation and subsequent conversion of one or both of the installed CTGs from simple-cycle operation to combined-cycle co-generation at some future date. In addition to these two options for installing and operating the proposed CTGs, the existing steam turbines in the TA-3 Co-generation Complex would be maintained and refurbished and would continue to be operated long-term with the CTGs.

Under the No Action Alternative, DOE, NNSA would not install the CTGs in the Co-generation Complex. The existing aged steam turbines would continue to serve LANL as a supplemental supply of electric power and steam. The existing turbines would not provide the reliability of an additional source of electricity and may not provide the power required for peak loads and emergency operations that LANL operations require. LANL would not be assured of adequate power for existing and approved operations. Under the No Action Alternative, the proposed CTGs would not provide the energy required to supply LANL with power in the event of a loss of import capability or in times of emergency. LANL would not have the ability to meet future minimum electric loads for LANL and Los Alamos County in the event of a total blackout of the northern New Mexico grid. This is not an alternative that meets NNSA's purpose and need for action.

[1] The NNSA is a separately organized agency within the Department of Energy (DOE) established by Congress in 2000 under Title 50 United States Code Chapter 41, Subchapter I, Section 2401.

The Proposed Action would be located in TA-3, a highly developed area of LANL. The installation site is located in an area that would be cleared of non-essential existing small structures (two cooling towers). The installation site is immediately adjacent to existing structures and vehicle parking areas. No undeveloped (so called "green field") areas would be involved. There is one potential release site in the area; if affected by the Proposed Action, this area would be sampled and remediated in accordance with New Mexico Environment Department requirements before installation activities could proceed. Traffic congestion in the area is not expected to increase. There would be adequate parking for University of California (UC) personnel and construction workers. Construction and demolition waste would be trucked to a licensed commercial landfill or reused for backfilling. Construction, excavation, and demolition activities for the proposed CTG installations would be expected to produce only temporary and localized air emissions. Once installation is complete, operational emissions would increase in the Co-generation Complex. However, under both Option A and Option B of the Proposed Action, nitrogen oxide (NOx) emissions from all equipment at the TA-3 Co-generation Complex, including the three existing boilers and any new CTGs, would all have to remain under 99.6 tons per year, as specified in the air quality permit for the existing TA-3 Co-generation Complex. Installation of the CTGs under the Proposed Action would have no effects on ecological resources, cultural resources, visual resources, water quality, land use, or traffic, and no adverse health effects on UC employees or construction workers. Installation of the new CTGs and compressors would not be sited over fault traces or within 50 ft (15 m) of any known active fault.

Cumulative effects of the Proposed Action, along with past, present, and reasonably foreseeable actions, on LANL and surrounding lands are anticipated to be negligible. Air quality, waste management, and environmental restoration are discussed further under cumulative effects. This analysis concludes that there would not be cumulatively significant effects on these resources. Moreover, some positive effects to resources, including utilities and infrastructure, and environmental restoration would occur as a consequence of the Proposed Action to install and operate two new CTGs in the TA-3 Co-generation Complex.